

REMARKS

Claims 56-96 are pending. By this Amendment, claims 56-95 from the parent application, and new claim 96 are added, and claims 1-55 are cancelled. Claims 56-96 are fully supported by the original specification as detailed in the following claim charts. Thus, no new matter is added by this Amendment.

New claims 56-87 respectively correspond to claims 1-3, 5-9, 14-17, 19-23, 28, 30, 32, 33, 36, 38, 40, 43-45, 47, 48, 51, 53 and 54 of U.S. Patent No. 6,198,793. See 37 C.F.R. §1.607(c). In addition, claims 88-96 are based upon claims 11, 12, 24, 26, 27, 37, 42, 49/50 and 1, respectively of U.S. Patent No. 6,198,793. Applicant requests that an interference be declared between this application and U.S. Patent No. 6,198,793.

In accordance with 37 C.F.R. §1.607(a)(5), Applicant applies the terms of the copied claims to Applicant's disclosure below. The following charts are just some examples of how the claims can be applied to applicant's disclosure, i.e., the charts are not meant to be all-inclusive.

<u>Claim 56</u>	<u>Description in Applicant's Application</u>
An illumination system for wavelengths ≤ 193 nm, comprising:	Title; page 1, lines 4-6; page 3, lines 5-7; page 9, lines 7-12
a light source having an illumination in a predetermined surface;	Item 54; page 9, lines 6-12; page 29, lines 2-8
a device for the production of a secondary light source;	Item 56; page 3, line 26 - page 4, line 1
a mirror or lens device having a mirror or lens, which is organized into a raster element;	Items 60, 220a, 220b; page 3, lines 26-28; page 9, lines 17-19; page 11, lines 17-28; page 12, line 29 - page 13, line 16; page 18, line 24 - page 20, line 25; page 27, lines 23-26
an optical element, which is arranged between said mirror or lens device and a reticule plane, whereby said optical element images said secondary light source in an exit pupil of the illumination system, wherein	Item 66; page 4, lines 1-8; page 10, lines 5-11; page 11, line 30 - page 12, line 2; page 13, lines 12-14; page 16, line 10 - page 17, line 10; page 18, line 24 - page 20, line 3; page 20, lines 12-25
said raster element of said mirror or lens is shaped and arranged in such a way that an image of said raster element covers a major portion of said reticule plane, and wherein said exit pupil is illuminated, and said exit pupil is defined by an aperture and a filling ratio.	Page 13, lines 18-31; page 14, lines 1-13; page 17, lines 12-19; page 45, lines 18-24

<u>Claim 57</u>	<u>Description in Applicant's Application</u>
The illumination system according to claim 56, wherein said optical element comprises at least one field mirror or at least one field lens.	Item 66; page 10, lines 5-11; page 11, line 30 - page 11, line 2; page 13, lines 12-14; page 27, lines 23-26

<u>Claim 58</u>	<u>Description in Applicant's Application</u>
The illumination system according to claim 57, wherein said optical element is at most two field mirrors or field lenses.	Items 66 and 68; page 10, lines 5-11; page 10, line 30 - page 11, line 2; page 13, lines 12-14; page 27, lines 23-26

<u>Claim 59</u>	<u>Description in Applicant's Application</u>
The illumination system according to claim 56, wherein said mirror or lens device comprises a mirror or a lens with a raster element formed as field honeycombs.	Items 60, 220a, 220b (raster elements - 62, 262, E1, E2); page 3, lines 26-28; page 9, lines 14-26; page 18, line 24 - page 20, line 3; page 27, lines 23-26

<u>Claim 60</u>	<u>Description in Applicant's Application</u>
The illumination system according to claim 59, wherein said field honeycombs in their aspect ratio essentially correspond to that of a field to be illuminated in said reticule plane.	Page 3, lines 26-28; page 9, lines 24-26

<u>Claim 61</u>	<u>Description in Applicant's Application</u>
The illumination system according to claim 59, wherein said mirror or lens with said raster element produces said secondary light source.	Page 3, line 30 - page 4, line 1; page 11, lines 8-11; page 20, lines 15-18; page 27, lines 23-26

<u>Claim 62</u>	<u>Description in Applicant's Application</u>
The illumination system according to claim 56, further comprising a collector that collects light from said light source.	Items 418, 422; page 29, lines 10-17

<u>Claim 63</u>	<u>Description in Applicant's Application</u>
The illumination system according to claim 62, wherein said collector and said mirror or lens with said raster element produce said secondary light source.	Page 3, line 30 - page 4, line 1; page 11, lines 5-11; page 20, lines 15-18; page 27, lines 23-26

<u>Claim 64</u>	<u>Description in Applicant's Application</u>
The illumination system according to claim 56, wherein said mirror or lens device comprises a first mirror or lens with a multiple number of field honeycombs and a second mirror or lens with a multiple number of pupil honeycombs.	Items 220a, 220b, 360a, 360b (honeycombs - 62, 262, E1, E2); page 4, lines 10-16; page 18, line 24 - page 20, line 18; page 22, lines 19-23; page 24, line 15 - page 25, line 5; page 27, lines 23-26

<u>Claim 65</u>	<u>Description in Applicant's Application</u>
The illumination system according to claim 64, wherein said field honeycombs are arranged on said first mirror or lens in such a way that they do not overlap and their images cover a surface to be illuminated in said reticule plane.	Fig. 14; page 23, lines 14-23; page 27, lines 23-26; page 27, line 31 - page 28, line 8

<u>Claim 66</u>	<u>Description in Applicant's Application</u>
The illumination system according to claim 64, wherein said pupil honeycombs are arranged on said second mirror or lens in such a way that their images, which are produced by said optical element, illuminate said exit pupil with a predetermined pattern.	Item 220b; page 19, line 21 - page 20, line 18; page 21, lines 10-13; page 27, lines 23-26

<u>Claim 67</u>	<u>Description in Applicant's Application</u>
The illumination system according to claim 66, comprising a light path between a pair of field and pupil honeycombs formed by rotating and tilting said field and said pupil honeycombs relative to one another.	Figs. 22-24; page 24, line 25 - page 26, line 19; page 27, lines 9-15

<u>Claim 68</u>	<u>Description in Applicant's Application</u>
The illumination system according to claim 56, further comprising a zigzag beam path produced by field and pupil planes.	Figs. 13, 20, 21, 25, 26, 28, 31, 32

<u>Claim 69</u>	<u>Description in Applicant's Application</u>
The illumination system according to claim 56, wherein said mirror or lens device comprises a telescope system.	Figs. 25, 26, 28, 31-32; items 418 and 422 constitute a Keplerian telescope; items 220a and 220b (or 220a and 220c) (or 510a and 510b) (or 360a and 360b) constitute a Keplerian telescope; page 28, line 10 - page 45, line 29

<u>Claim 70</u>	<u>Description in Applicant's Application</u>
The illumination system according to claim 69, wherein said mirror or lens comprises said raster element, and is one mirror or lens of said telescope system.	Items 220a, 360a, 510a (rasters - 62); page 18, line 27 - page 19, line 9; page 27, lines 23-26, page 39, line 16 - page 42, line 7, page 49, lines 1-15

<u>Claim 71</u>	<u>Description in Applicant's Application</u>
The illumination system according to claim 69, wherein said telescope system comprises a collector mirror or collector lens.	Items 418, 422; page 29, lines 10-17

<u>Claim 72</u>	<u>Description in Applicant's Application</u>
The illumination system according to claim 71, wherein said telescope system additionally comprises a first mirror or lens with a multiple number of field honeycombs, whereby said collector mirror or said collector lens has positive refractive power.	First mirror or lens with multiple field honeycombs - items 220a, 360a, 510a; collector mirrors - 418, 422 are concave and therefore have a positive power; page 18, line 27 - page 19, line 9; page 27, lines 23-26, page 39, line 16 - page 42, line 7, page 49, lines 1-15

<u>Claim 73</u>	<u>Description in Applicant's Application</u>
The illumination system according to claim 56, wherein said raster element of said mirror is curved.	Item 62; Figs. 5, 9, 14, 20, 22, 24; page 9, lines 19-20; page 14, line 28 - page 15, line 5

<u>Claim 74</u>	<u>Description in Applicant's Application</u>
The illumination system according to claim 56, wherein said raster element of said mirror has a surface that is arranged on a curved surface.	Item 220c; Fig. 31; page 44, lines 1-15

<u>Claim 75</u>	<u>Description in Applicant's Application</u>
The illumination system according to claim 56, wherein said raster element of said mirror is tilted relative to an enveloping or bearing surface.	Figs. 22-24; page 24, line 25 - page 26, line 19; page 27, lines 9-15; page 27, lines 9-15

<u>Claim 76</u>	<u>Description in Applicant's Application</u>
The illumination system according to claim 56, wherein said mirror is comprised of at least two raster elements, said at least two raster elements are arranged in rows and each adjacent row is displaced relative to the other adjacent row by a fraction of a length of one of said raster elements.	Figs. 23, 24

<u>Claim 77</u>	<u>Description in Applicant's Application</u>
The illumination system according to claim 56, wherein said mirror device has an outer axial course of a light bundle that is free of vignetting.	Page 14, lines 10-13; page 27, line 31 - page 28, line 8

<u>Claim 78</u>	<u>Description in Applicant's Application</u>
The illumination system according to claim 56, wherein the illumination system has a field that is a rectangular field or an annular segment.	Page 12, lines 4-8; page 21, lines 14-17

<u>Claim 79</u>	<u>Description in Applicant's Application</u>
The illumination system according to claim 56, further comprising an optical element that has a function selected from the group consisting of imaging a secondary light source in an entrance pupil of a subsequent projection objective, remodeling a pre-given rectangular illumination by raster elements to form a field in a form of an annular segment, adjusting an intensity distribution over said field, and mixtures thereof.	Item 66; page 4, lines 1-8; page 10, lines 5-11; page 11, line 30 - page 12, line 2; page 13, lines 12-14; page 16, line 10 - page 17, line 10; page 18, line 24 - page 20, line 3; page 20, lines 12-25

<u>Claim 80</u>	<u>Description in Applicant's Application</u>
The illumination system according to claim 56, further comprising an accessible diaphragm plane.	Page 4, line 30 - page 5, line 6; page 31, line 8 - page 32, line 2; page 32, line 27 - page 37, line 18

<u>Claim 81</u>	<u>Description in Applicant's Application</u>
The illumination system according to claim 80, further comprising a masking device at said diaphragm plane, with which a type of illumination can be adjusted.	Item 452 (Fig. 27); page 4, line 30 - page 5, line 6; page 31, line 8 - page 32, line 2; page 32, line 27 - page 37, line 18

<u>Claim 82</u>	<u>Description in Applicant's Application</u>
The illumination system according to claim 56, wherein said light source is a synchrotron radiation source.	Page 3, lines 14-17; page 9, lines 11-12

<u>Claim 83</u>	<u>Description in Applicant's Application</u>
EUV projection exposure unit for microlithography with an illumination system according to claim 56 comprising a mask on a carrier system, a projection objective, and a light-sensitive object on a carrier system.	Mask on a carrier system - M on MS; projection objective - item 76; light sensitive object on carrier system - W on WS; page 4, lines 18-24; page 10, line 16 - page 11, line 3; page 12, lines 17-27; page 22, lines 4-11; page 28, lines 10-30

<u>Claim 84</u>	<u>Description in Applicant's Application</u>
The EUV projection exposure unit according to claim 83, wherein the unit is a scanning system.	Page 4, lines 26-28; page 10, lines 14-18; page 22, lines 4-11; page 28, lines 10-12

<u>Claim 85</u>	<u>Description in Applicant's Application</u>
The EUV projection exposure unit according to claim 83, further comprising a vacuum window transparent to EUV that is arranged in a beam path.	Item 604 (Fig. 32); page 28, lines 28-30; page 44, lines 21-28

<u>Claim 86</u>	<u>Description in Applicant's Application</u>
Process for the production of microelectronic components according to claim 56.	Page 5, lines 8-20

<u>Claim 87</u>	<u>Description in Applicant's Application</u>
A process for designing an illumination system for wavelengths ≤ 193 nm, said illumination system having:	Page 9, lines 7-12
a light source with any desired illumination in a predetermined surface,	Item 54; page 9, lines 6-12; page 29, lines 2-8
mirror or lens device having at least two mirrors or lenses, with each mirror or lens organized into a raster element,	Item 220 (mirrors 220a, 220b) - also items 360a, 360b in Figs. 28; Figs. 13-32; page 18, line 24 - page 20, line 25; page 27, lines 23-26

<u>Claim 87</u>	<u>Description in Applicant's Application</u>
an optical element arranged between said mirror or lens device and a reticule plane,	Item 66; page 4, lines 1-8; page 10, lines 5-11; page 11, line 30 - page 12, line 2; page 13, lines 12-14; page 16, line 10 - page 17, line 10; page 18, line 24 - page 20, line 3; page 20, lines 12-25
said process comprising the following steps:	
arranging said raster element of a first mirror or lens to cover said surface without overlapping;	Item 220a; Figs. 14, 22, 24, 29; page 18, line 27 - page 19, line 2; page 27, line 31 - page 28, line 8
shaping said raster element of said first mirror or lens such that its form corresponds to that of a field to be illuminated, whereby a secondary light source is assigned to each said raster element;	Page 3, lines 26-28; page 9, lines 24-26; page 19, lines 4-9; page 20, lines 15-18
arranging said raster element of a second mirror or lens to a position at said secondary light source;	Item 220b; page 19, line 21 - page 20, line 10; page 20, line 18; page 22, lines 29-31
shaping said raster element of said second mirror or lens such that its form corresponds to that of said secondary light source;	Page 20, lines 5-10; page 22, lines 21-23; page 23, lines 21-23
rotating or tilting said raster elements of said first and second mirrors or orienting and selecting an angle of deflection of a prismatic component of said raster elements of said first or second lens, a light path being produced, whereby a predetermined assignment of said raster elements of said first mirror or lens to said second mirror or lens is maintained, so that said raster element of said first mirror or lens is imaged in said reticule plane by said raster element of said second mirror or lens;	Page 20, line 2; page 20, lines 17-18; page 24, line 25 - page 26, line 19; page 27, lines 9-15
an image of said raster element of said first mirror or lens is partially superimposed in said reticule plane; and	Page 13, lines 12-14; page 21, lines 10-13
said secondary light source is imaged in an exit pupil by said optical element.	Page 21, lines 10-16; page 22, lines 19-23; page 23, lines 7-12; page 23, lines 21-23

<u>Claim 88</u>	<u>Description in Applicant's Application</u>
The illumination system according to claim 56, wherein said light source has a plasma source.	Page 9, lines 9-11; page 29, lines 2-8

<u>Claim 89</u>	<u>Description in Applicant's Application</u>
The illumination system according to claim 56, wherein said light source radiates parallel beams.	Fig. 4; page 11, lines 5-8; page 13, line 4

<u>Claim 90</u>	<u>Description in Applicant's Application</u>
The illumination system according to claim 69, wherein said telescope system comprises a first mirror or lens with a multiple number of honeycombs and a second mirror or lens with a multiple number of pupil honeycombs, whereby said first mirror or lens has positive refractive power and said second mirror or lens has power.	First mirror or lens - items 220a, 360a, 510a; second mirror or lens - items 220b, 360b, 510b; page 18, line 27 - page 19, line 9; page 27, lines 23-26, page 39, line 16 - page 42, line 7, page 49, lines 1-15

<u>Claim 91</u>	<u>Description in Applicant's Application</u>
The illumination system according to claim 56, wherein said illumination system comprises at least three mirrors, and wherein at least one mirror has said raster element.	Fig. 4; mirrors 60, 66, 68 - rasters on mirror 60; also Figs. 13, 21-26, 28-32

<u>Claim 92</u>	<u>Description in Applicant's Application</u>
The illumination system according to claim 56, wherein said illumination system comprises at least four mirrors, and wherein at least two mirrors have said raster elements.	Fig. 13; mirrors 220a, 220b, 66, 68 - rasters on mirrors 220a, 220b; also Figs. 21-26, 28-32

<u>Claim 93</u>	<u>Description in Applicant's Application</u>
The illumination system according to claim 56, wherein said raster element has an aspect ratio of about 1:15.	Page 14, line 17

<u>Claim 94</u>	<u>Description in Applicant's Application</u>
The illumination system according to claim 56, further comprising a field-side numerical aperture that includes 0.015.	Page 14, lines 15-18

<u>Claim 95</u>	<u>Description in Applicant's Application</u>
The EUV projection exposure unit according to claim 83, further comprising an illumination intensity at said light-sensitive object, with an unstructured mask, that has no position-dependent differences.	Page 9, lines 2-3; page 13, lines 18-27; page 17, lines 12-14; page 23, lines 14-16; page 45, lines 18-24

<u>Claim 96</u>	<u>Description in Applicant's Application</u>
An illumination system for wavelengths ≤ 193 nm, comprising:	Title; page 1, lines 4-6; page 3, lines 5-7; page 9, lines 7-12
a light source having an illumination in a predetermined surface;	Item 54; page 9, lines 6-12; page 29, lines 2-8
a device for the production of a secondary light source;	Item 56; page 3, line 26 - page 4, line 1
a mirror or lens device having a mirror or lens, which is organized into a raster element;	Items 60, 220a, 220b; page 3, lines 26-28; page 9, lines 17-19; page 11, lines 17-28; page 12, line 29 - page 13, line 16; page 18, line 24 - page 20, line 25; page 27, lines 23-26
an optical element, which is arranged between the mirror or lens device and a reticle plane, whereby the optical illuminates the reticle plane in a superposed manner,	Item 66; page 4, lines 1-8; page 10, lines 5-11; page 11, line 30 - page 12, line 2; page 13, lines 12-14; page 16, line 10 - page 17, line 10; page 18, line 24 - page 20, line 3; page 20, lines 12-25

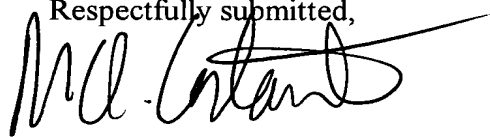
<u>Claim 96</u>	<u>Description in Applicant's Application</u>
wherein the secondary light source is formed at an exit pupil of the illumination system	Item 66; page 4, lines 1-8; page 10, lines 5-11; page 11, line 30 - page 12, line 2; page 13, lines 12-14; page 16, line 10 - page 17, line 10; page 18, line 24 - page 20, line 3; page 20, lines 12-25

In addition, Applicant proposes that the Count be claim 56 or claim 96 of this application and/or claim 1 of U.S. Patent No. 6,198,793.

Applicant submits that all claims of U.S. Patent No. 6,198,793 and all claims of this application should be designated as corresponding to the Count.

Examination, allowance and declaration of an interference in due course are earnestly solicited. The Examiner is invited to contact Applicant's undersigned attorney if there are any questions.

Respectfully submitted,



Mario A. Costantino
Registration No. 33,565

MAC/ccs

Attachment:
Information Disclosure Statement

Date: October 27, 2003

OLIFF & BERRIDGE, PLC
P.O. Box 19928
Alexandria, Virginia 22320
Telephone: (703) 836-6400

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